

# BALANCED SCORECARD FOR QUALITY EXCELLENCE IN THE CONSTRUCTION INDUSTRY: A SUCCESS STORY

*“Strategic Performance Management Through Balanced Scorecard: Local Experience” Seminar*



HONG KONG SOCIETY FOR QUALITY

*LIU T. C. Davis*

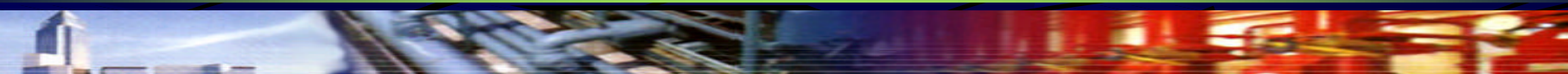
*WAN K. M. Sammy*

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# CONTENT

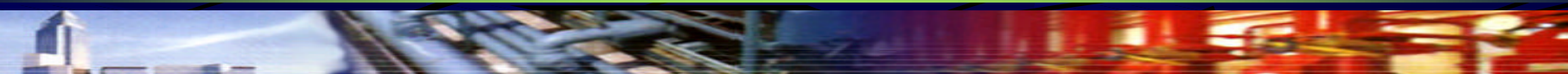
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1. Introduction – *Strategic tools for business excellence*
2. Problems Besetting – *Criticism of traditional construction management*
3. Philosophy of Quality Management – *Towards millennium*
4. The Balanced Scorecard – *Four perspectives management*
5. Integration of Two Systems – *A holistic strategic management system*
6. Analogue Group's Experience – *Feasibility & challenges ?*
7. Discussion & Conclusion – *Achieve synergy ?*



# **INTRODUCTION**

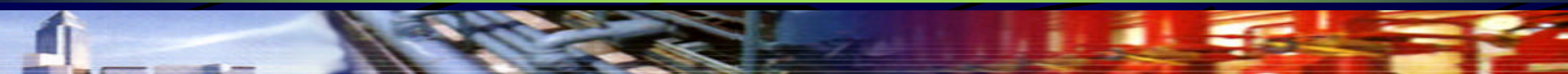
**Strategic Tools For Business Excellence**



# 1. Introduction

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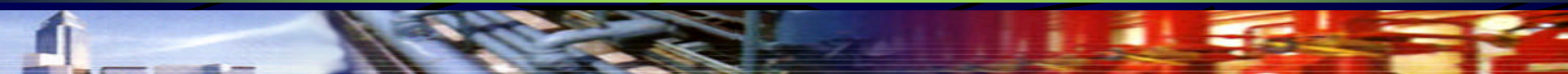
- ❖ All contractors and consultants in Hong Kong are required to be certified to meet ISO 9001 standard as a **prerequisite** for Government projects.
- ❖ Numerous **problems encountered** in the conventional construction industry.
- ❖ New generation of **ISO 9000 series** in which the Total Quality Management (TQM) principles are resembled.
- ❖ The **Balanced Scorecard (BSC)** – a performance measurement tools with four perspectives.



# 1. Introduction

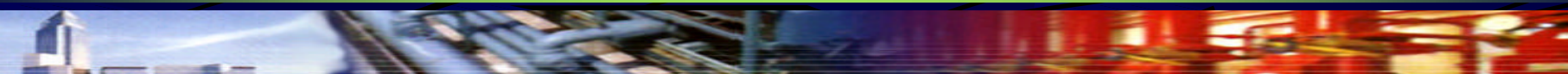
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- ❖ Some areas of the ISO 9000 standard and BSC are **common** in nature and content.
- ❖ Brief conceptual introduction and comparison of ISO 9000 standard and BSC.
- ❖ The possibility of integration as a **consolidated strategic tool**.
- ❖ Some practical experience sharing of an E & M contractor in Hong Kong.



# **PROBLEMS BESETTING**

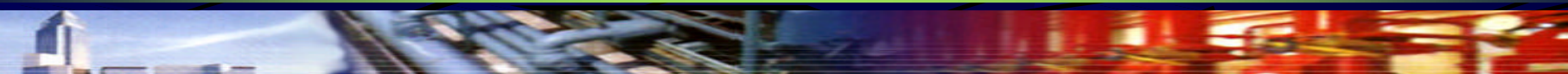
**Criticism of Traditional Construction Management**



## 2. Problems Bessetting

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- ❖ Fail to put efforts on **less tangible** and **non-financial measure** such as site safety record and environmental performance.
- ❖ Culture of “**Just-make**” and lack of culture of continuously improving on its products and operations.
- ❖ **Customer satisfaction** not in focus.
- ❖ Extensive use of **traditional** and **labour-intensive** construction methods.
- ❖ Inadequate trained and skillful **workforce**.

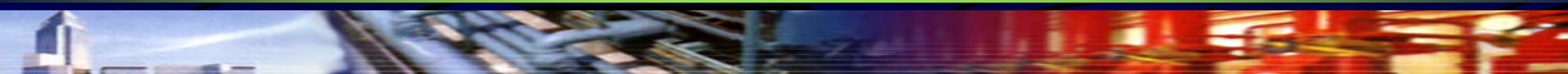




## 2. Problems Besetting

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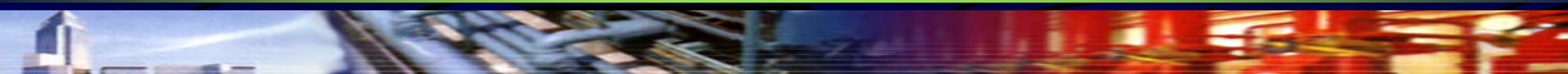
- ❖ Short-term attitude to business development.
- ❖ Misleading information for cost allocation, control and decision making.
- ❖ Fragmentation and adversarial culture within the industry.





# **PHILOSOPHY OF QUALITY MANAGEMENT**

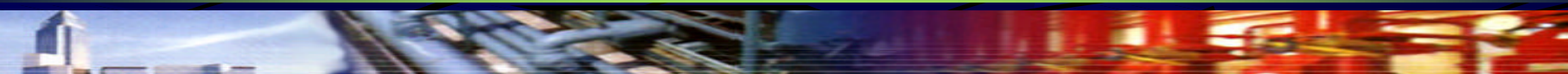
**Towards Millennium**



### 3. Philosophy of Quality Management

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- ❖ QM is designed to **continually improve** performance and address customer requirements.
- ❖ ISO 9000 standard assists the establishment and implementation.
- ❖ A breakthrough of quality characteristics in ISO 9000:2000 with **eight principles** as fundamental to management.



### 3. Philosophy of Quality Management

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## EIGHT PRINCIPLES



Customer focus

Involvement of people

System approach

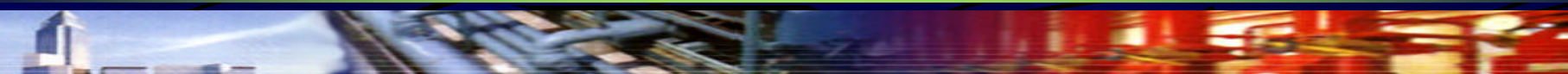
Factual approach

Leadership

Process approach

Continual improvement

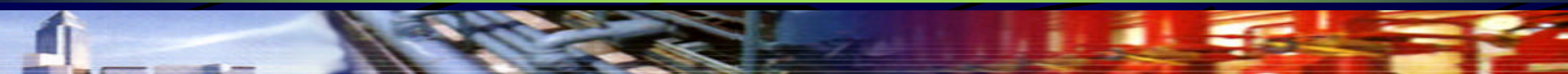
Mutually beneficial supplier  
relationship



### 3. Philosophy of Quality Management

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- ❖ Based on a **process model** and all processes are interconnected effectively.
- ❖ Achieve the **quality objectives** derived from customers' expectations and stakeholders' implied requirements.
- ❖ Similar to principles of the international **Business Excellence Model** (except excellence in business results).
- ❖ **Contributes** to productivity, competitiveness, customer satisfaction and continual improvement.





# THE BALANCED SCORECARD

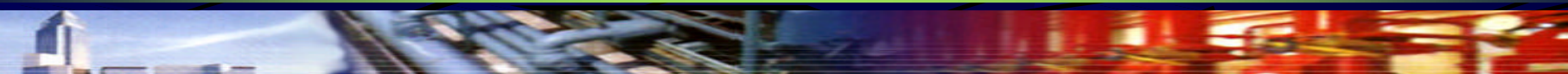
Four Perspectives Management



## 4. The Balanced Scorecard

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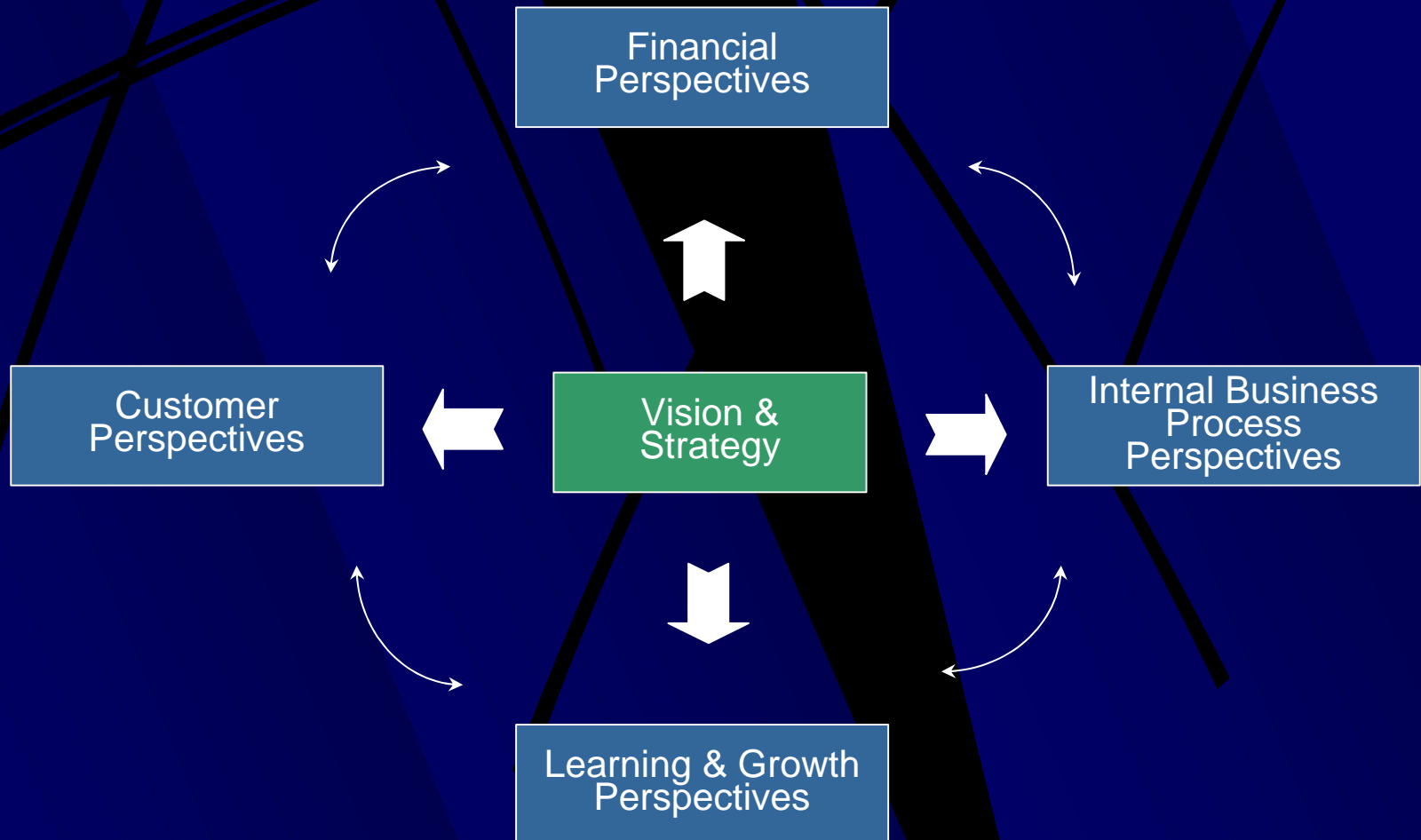
- ❖ A performance measurement method and strategic management tool for measuring both **tangible** and **intangible** assets.
- ❖ Different perspectives towards balanced **long-term strategic goals**.
- ❖ Translates strategy and vision into **critical success factors**.
- ❖ There are correlations and causations in the **cause-and-effect relationships** of four perspectives.
- ❖ Improvement in one area will contribute to the driving of improvement in other elements and “**Chain Process**” is achieved.





## 4. The Balanced Scorecard

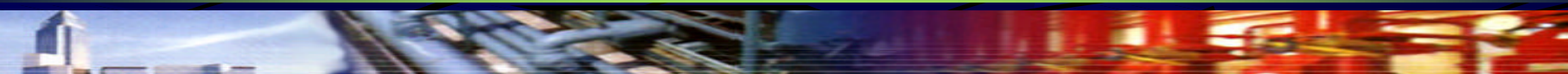
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## 4. The Balanced Scorecard

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- ❖ The vision and strategy are translated into objectives and are **communicated** and **aligned** to all levels.
- ❖ A **business plan** for allocating resources or budgets is important.
- ❖ **Feedback** and **learning** processes should be implemented.
- ❖ Different market situations, business climates, competitive environments require **different scorecards**.



# 4. The Balanced Scorecard

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## Examples of Success Factors – Financial Perspective

- ❖ Total assets / employee (\$)
- ❖ Revenues / employee (\$)
- ❖ Profits / employee (\$)
- ❖ Market value (\$)
- ❖ Return on net assets (\$)
- ❖ Return on total assets (%)
- ❖ Value added / employee (\$)
- ❖ Profit margin (%)
- ❖ Contribution margin (%)
- ❖ Cash flow (\$)
- ❖ Solvency (%)
- ❖ Return on investment (%)
- ❖ Total costs (\$)



# 4. The Balanced Scorecard

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## Examples of Success Factors – Customer Perspective

- ❖ Number of customer (no.)
- ❖ Market share (%)
- ❖ Customer lost (no.)
- ❖ Satisfied-customer index (%)
- ❖ Customer-loyalty index (%)
- ❖ No. of visits to customers (no.)
- ❖ No. of complaints (no.)
- ❖ Marketing expenses (\$)
- ❖ Brand-image index (%)
- ❖ Average customer size (\$)
- ❖ Customer rating (%)
- ❖ Service expense / customer / yr (\$)

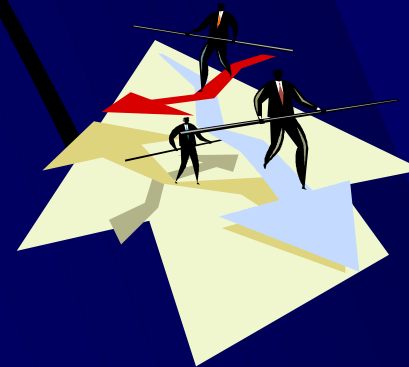


# 4. The Balanced Scorecard

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## Examples of Success Factors – Process Perspective

- ❖ Processing time (no.)
- ❖ On-time delivery (%)
- ❖ Average lead time (no.)
- ❖ Inventory turnover (no.)
- ❖ Improvement in productivity (%)
- ❖ IT capacity / employee (no.)
- ❖ Emissions from production (no.)
- ❖ Environmental impact (no.)
- ❖ Industrial accident (no.)
- ❖ Cost of administrative error (%)
- ❖ Administrative expense (\$)
- ❖ Contracts filed without error (no.)
- ❖ Time for decision making (no.)



# 4. The Balanced Scorecard

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## Examples of Success Factors – Learning & Growth Perspective

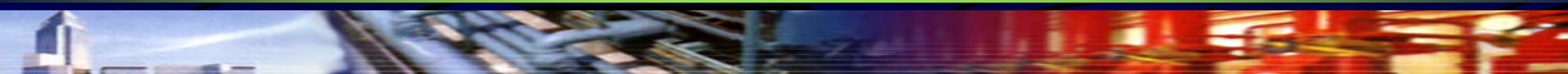
- ❖ R&D expense (\$)
- ❖ Investment in training (\$)
- ❖ Patents pending (no.)
- ❖ Satisfied-employee index (no.)
- ❖ Empowerment index (no.)
- ❖ Ratio of new products (%)
- ❖ Leadership index (no.)
- ❖ Motivation index (no.)
- ❖ Employee turnover (%)
- ❖ Average absenteeism (no.)
- ❖ University degree holders (no.)
- ❖ CPD training hours (no.)





# **INTEGRATION OF TWO SYSTEMS**

**A Holistic Strategic Management System**

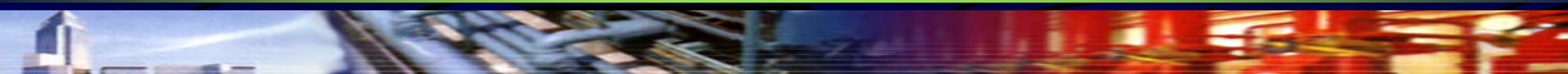




## 5. Integration of Two Systems

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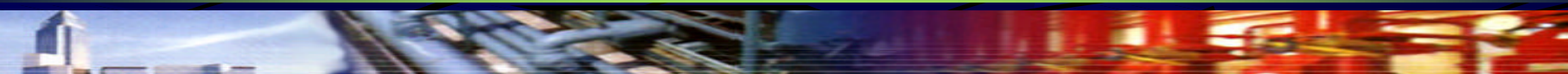
- ❖ QMS does not emphasize the financial perspective and balanced goals.
- ❖ BSC lacks a comprehensive operation system which specifies basic elements for smooth, effective and efficient management.
- ❖ BSC may well be reconciled with QMS for developing a holistic strategic management system.
- ❖ Lead to long-term strategic financial and non-financial goals and achieve stakeholders' satisfaction.



## 5. Integration of Two Systems

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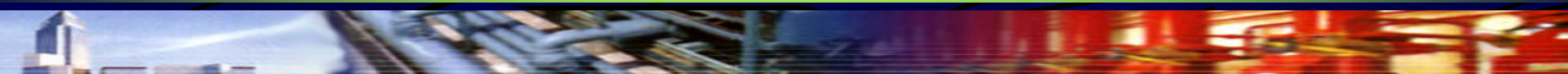
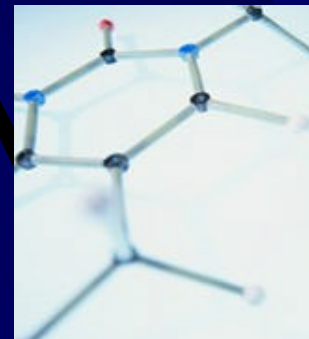
- ❖ The critical success functions are strategically **aligned** with critical quality objectives.
- ❖ Establish **critical strategic business objectives** in seeking a full spectrum measurement and analysis.
- ❖ Goals are derived by **linking management responsibility** and **leadership** to resources management.
- ❖ **Full involvement** of all levels is vital and communication becomes the primacy of integration.



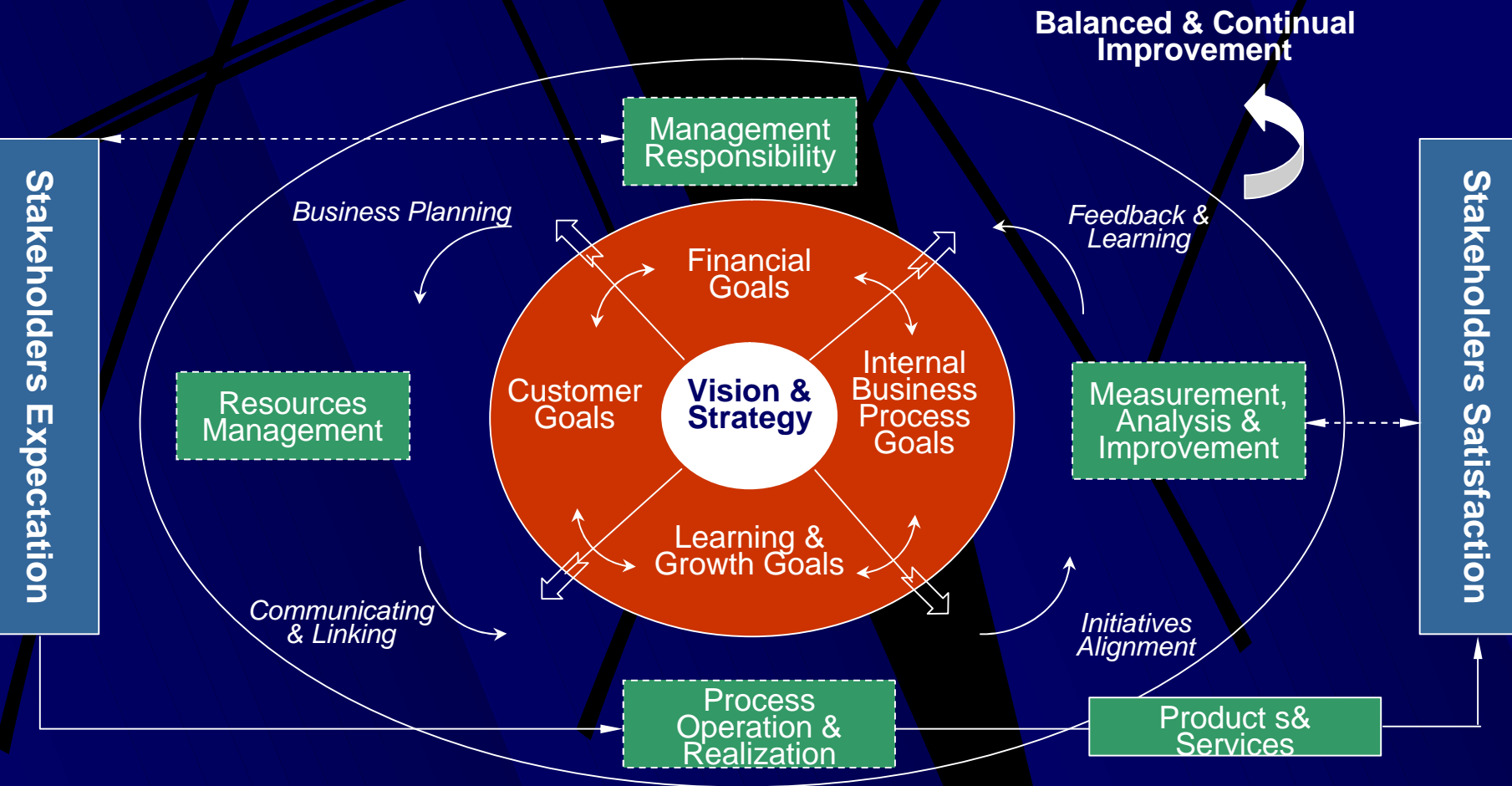
## 5. Integration of Two Systems

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- ❖ An integrated measurement becomes an **integral part** of the **factual management** of system.
- ❖ **Measurement** and **alignment** of objectives in business management processes.
- ❖ **Validation** and **modification** of cause-and-effect relationships through feedback and learning system.



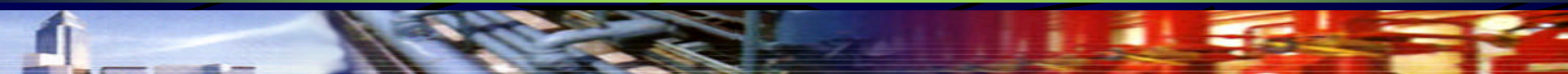
# 5. Integration of Two Systems



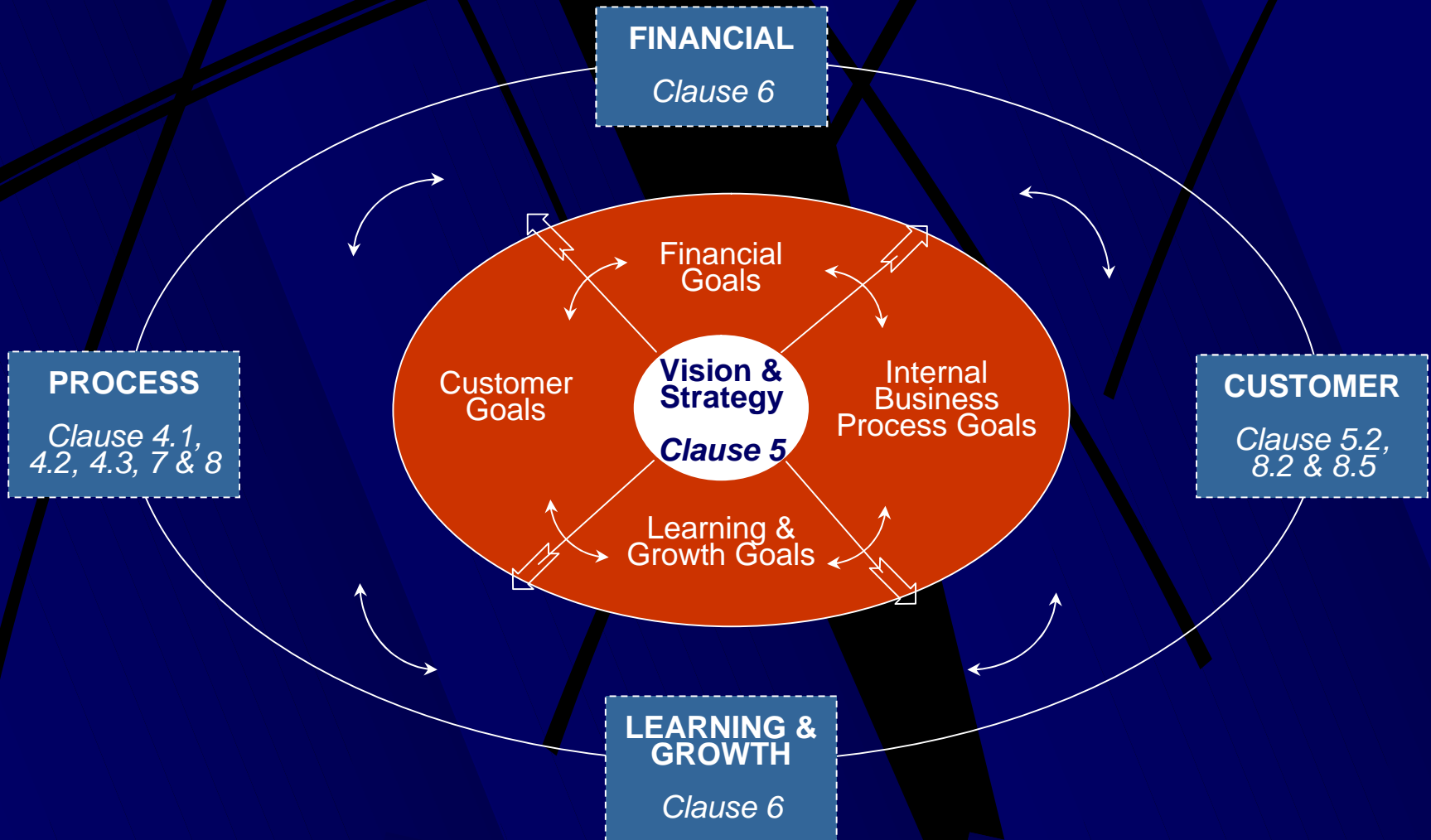
## 5. Integration of Two Systems

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- ❖ BSC supplemented QMS by **linking traditional cost of quality** to regular financial performance.
- ❖ Deepens the **top-level commitment** for business long-term strategy.
- ❖ Broadens further the perspectives of the BSC.
- ❖ Invites **respective stakeholders** to commit in quality cultivation.
- ❖ Acts as a company's **common language** for strategic improvement and business excellence.

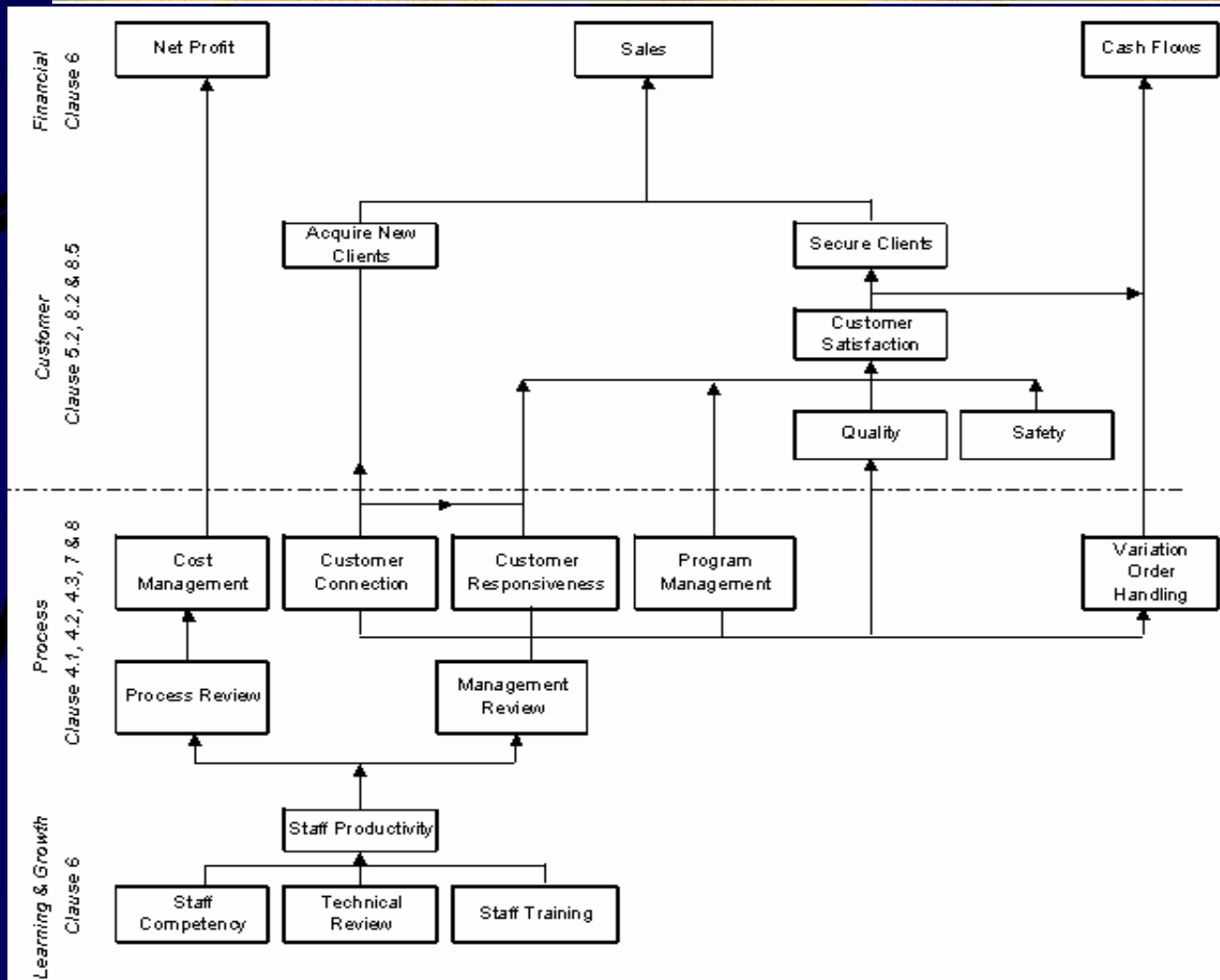


# 5. Integration of Two Systems





# 5. Integration of Two Systems

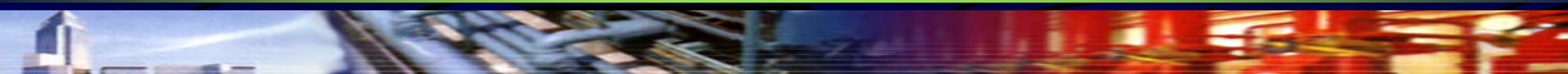


Cause-and-effect relationships



# **ANALOGUE GROUP'S EXPERIENCE**

**Feasibility & Challenges**

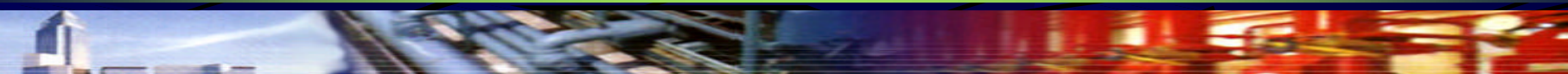


# 6. Analogue Group's Experience

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## Company Profile

- ❖ Key player in the **E&M contracting industry** in Hong Kong and Mainland China including design, supply, installation, testing & commissioning, operation and maintenance of:
  - Building automation systems
  - Electrical services systems
  - Fire services systems
  - HVAC systems
  - Plumbing & drainage systems
  - Sewage and water treatment systems
  - System operation and maintenance

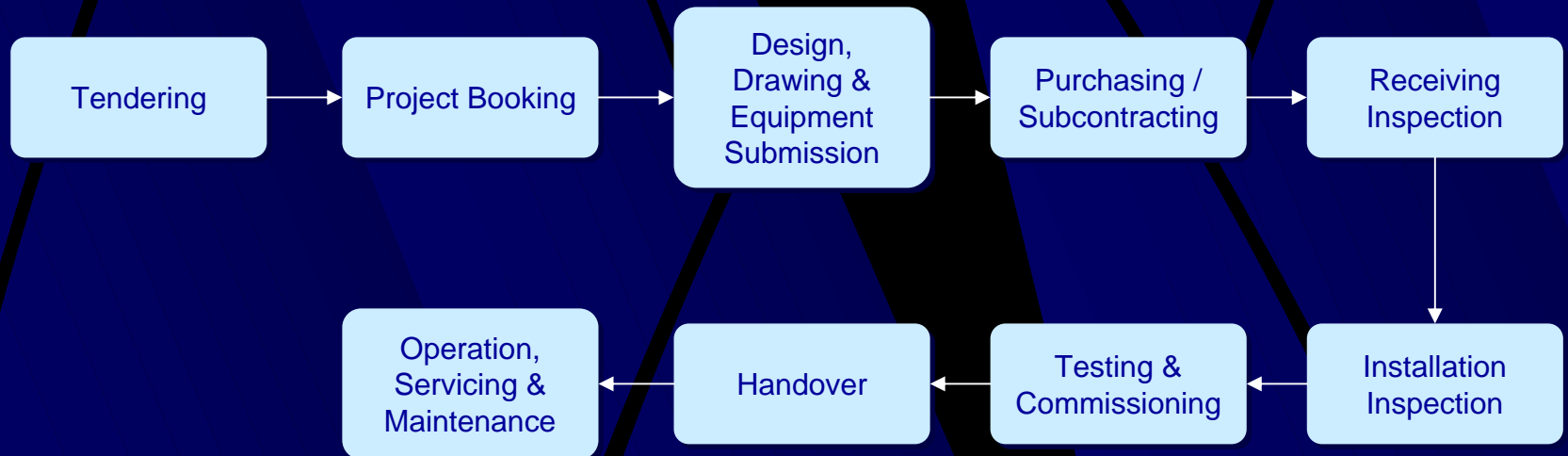


# 6. Analogue Group's Experience

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## Essential Company Processes / Operations

❖ New installation project:

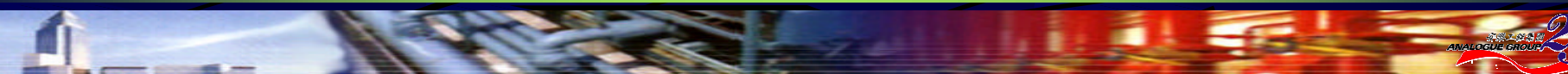
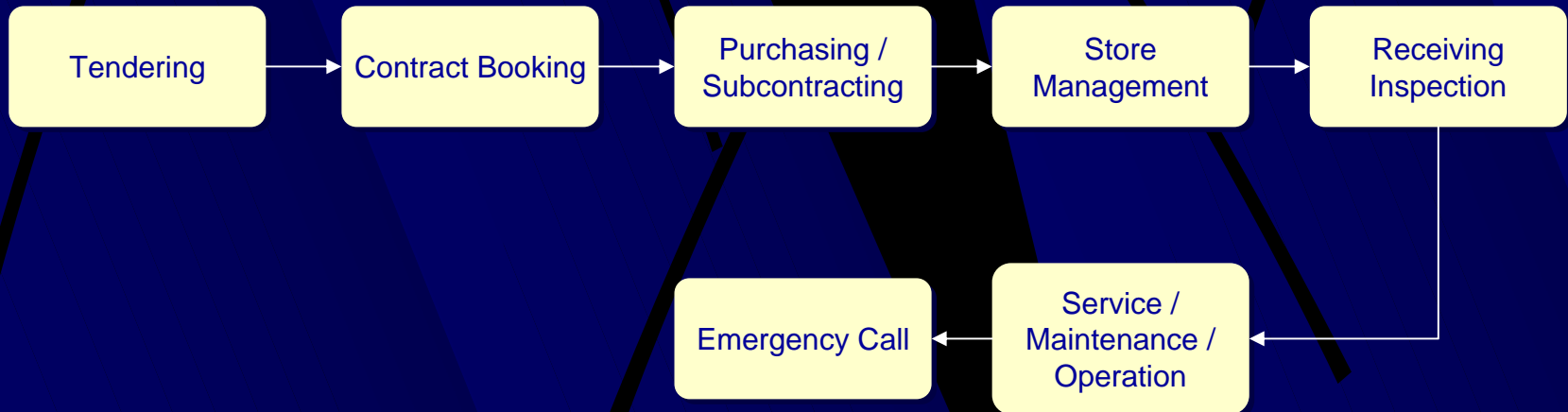


# 6. Analogue Group's Experience

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## Essential Company Processes / Operations

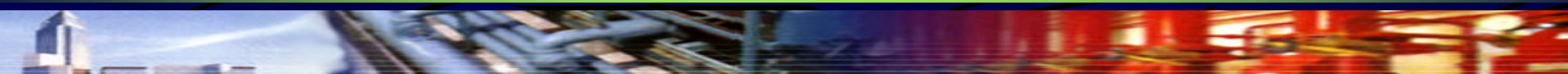
❖ Service & maintenance project:



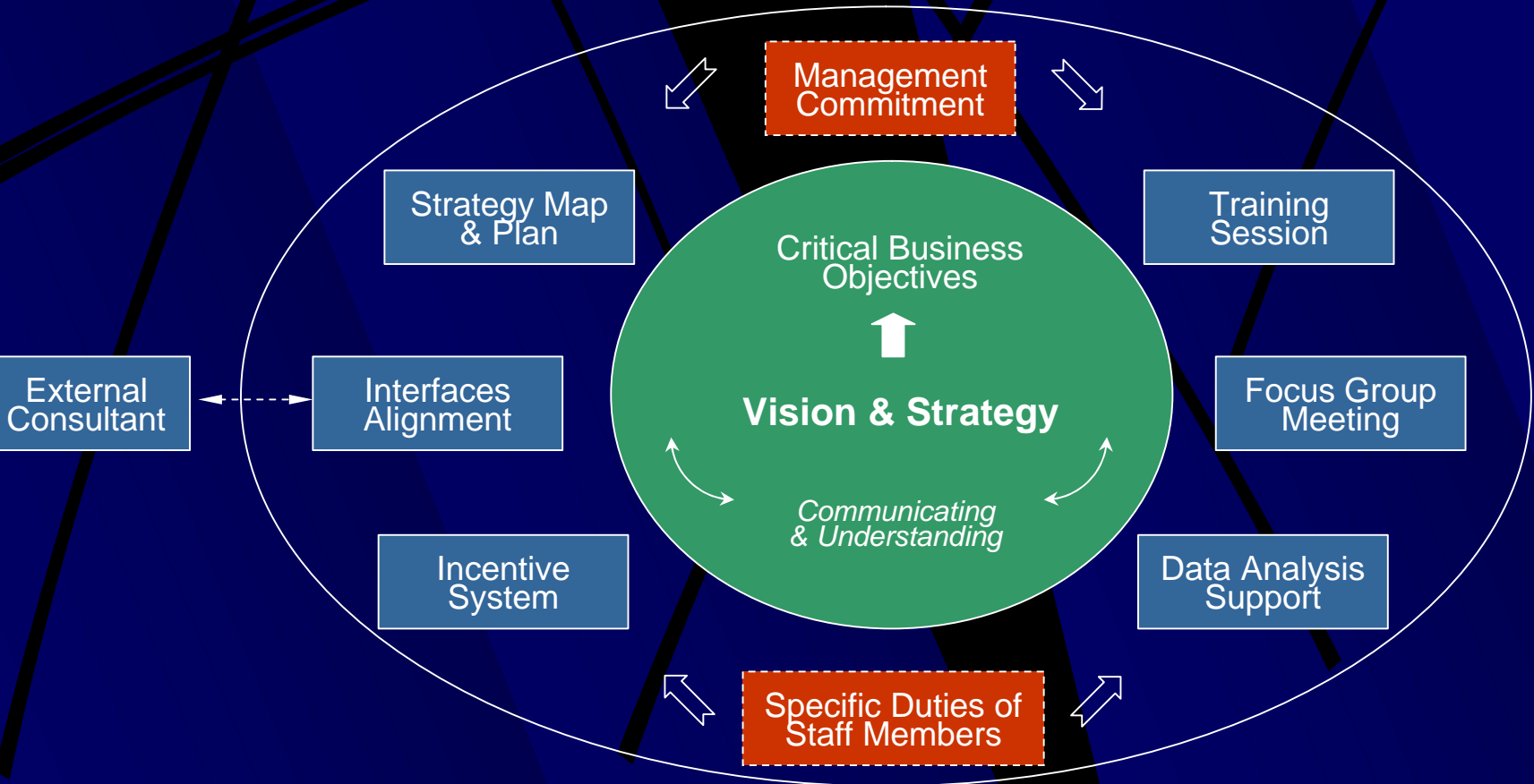
## 6. Analogue Group's Experience

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- ❖ AG currently maintains four ISO 9001 certificates and has gained experience for QMS in construction industry for about ten years.
- ❖ BSC model is introduced as a performance measurement tool and to complement the QMS to achieve its quality objectives.
- ❖ Two management models are effectively implemented after they are integrated into one system.



## 6. Analogue Group's Experience

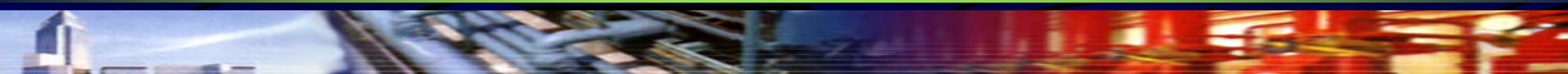




## 6. Analogue Group's Experience

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- ❖ **Top-level commitment** is vital and each colleague is assigned with specific responsibilities.
- ❖ A **strategy map** is created to link objectives and measures for each department implementing the system.
- ❖ **Rating** for each critical business objective is essential and **subject to change** under varying business environment.
- ❖ Regular **meetings** and **training** sessions are organized to discuss the underlying logic of system and to review performance achieved.

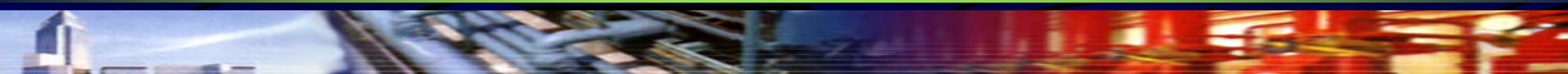




## 6. Analogue Group's Experience

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- ❖ A proper **incentive system** is created to link the objective achievement with reward system.
- ❖ **Information technology** support is provided to handle, manage and analyze the data.



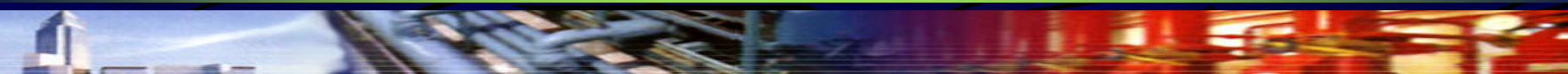
## 6. Analogue Group's Experience

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### Bear In Mind

Ask yourselves the following questions before the implementation.

- ❖ **Why** we need an integrated system ?
- ❖ **What** objectives and measures are appropriate for our department ?
- ❖ **How** are resources determined to implement the system ?
- ❖ **Does** company recognize our intangible achievements ?

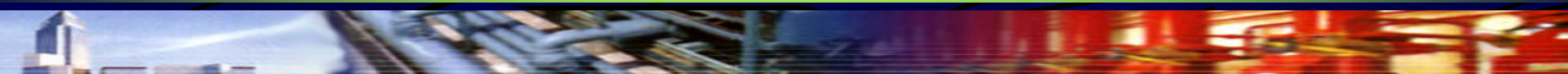


## 6. Analogue Group's Experience

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### Implementation Commentaries

- ❖ “Help us to be more *focused*...”
- ❖ “Guide us through in a *more balanced way* in our operation...”
- ❖ “Help to manage the department – give an *overall picture*, drive to work on weak areas...”
- ❖ “Help in planning and provide an *indicator* to performance...”
- ❖ “Help to *reinforce* regular review of accomplishment in a more balanced way...”

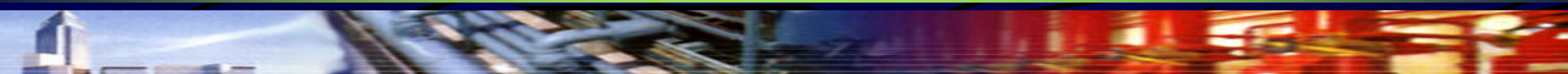


## 6. Analogue Group's Experience

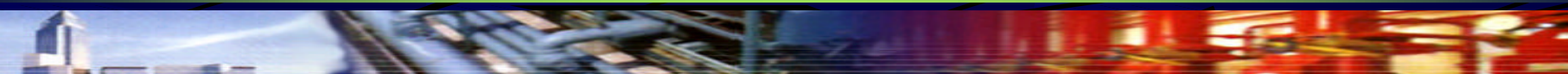
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### Implementation Commentaries

- ❖ “Help to *drive planning* and *execution* of new system / method to improve operation efficiency...”
- ❖ “Take it *serious*, manage the system with *care*, 用心去做, 不要為做而做, 交功課...”
- ❖ “Enhance communication with empowerment using the *same language*, barriers are broken...”
- ❖ “*Save much of our time* not to implement two systems separately...”



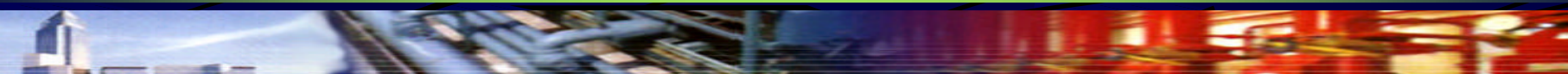
# DISCUSSION & CONCLUSION



## 7. Discussion & Conclusion

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- ❖ ISO 9000 can hardly ensure “real” quality in construction industry.
- ❖ BSC provides necessary mechanisms to realize strategy from different perspectives.
- ❖ Two systems can be integrated to achieve synergy.
- ❖ Achieves customer satisfaction while being sustainable by maintaining balanced objectives and performance.
- ❖ May help tackle the problems being faced in the construction industry at large.





# 7. Discussion & Conclusion

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## Benefits to Company

- ❖ Mobilizes company's potential for **strategic thinking**.
- ❖ A tool for **communication** and **dialogue**.
- ❖ Provides **documentation** of shared views about strategic intentions.
- ❖ Useful for **realizing strategy** from time to time.





**THANK YOU**

